

Oil & natural gas extraction data

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Climate Mitigation Services
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Iraq National Oil Company

www.oil.gov.iq Baghdad

yellow column indicates original reported units State-owned enterprise

Production / Extraction data

| Year | Crude Oil & NGL | | | Natural Gas | | |
|------|-----------------|-----------------|-----------------|----------------|----------------|----------------|
| | Net production | Net production | Net production | Net production | Net production | Net production |
| | Thousand bbl /d | Million bbl /yr | Million bbl /yr | Billion cf/yr | Billion cf/yr | Billion cf/yr |

- 15 1950
- 16 1951
- 17 1952
- 18 1953
- 19 1954
- 20 1955
- 21 1956
- 22 1957
- 23 1958
- 24 1959
- 25 1960
- 26 1961
- 27 1962
- 28 1963
- 29 1964
- 30 1965
- 31 1966
- 32 1967
- 33 1968
- 34 1969
- 35 1970
- 36 1971
- 37 1972
- 38 1973
- 39 1974
- 40 1975
- 41 1976
- 42 1977
- 43 1978
- 44 1979
- 45 1980
- 46 1981
- 47 1982
- 48 1983
- 49 1984
- 50 1985
- 51 1986
- 52 1987
- 53 1988
- 54 1989
- 55 1990
- 56 1991
- 57 1992
- 58 1993
- 59 1994
- 60 1995
- 61 1996
- 62 1997
- 63 1998
- 64 1999
- 65 2000
- 66 2001
- 67 2002
- 68 2003
- 69 2004
- 70 2005
- 71 2006
- 72 2007
- 73 2008
- 74 2009
- 75 2010
- 76 2011
- 77 2012
- 78 2013
- 79 2014
- 80 2015
- 81 2016
- 82 2017
- 83 2018
- 84 2019

Iraq National Oil Company formed in 1966
Turkish Petroleum founded in 1912
Iraq Petroleum Company was nationalized in 1972 (became INOC)

Note: allocation of 80% of Iraqi oil and gas production to INOC is subject to revision (up from 60%; revise to 100%)



| EIA data | EIA data | Iraq NOC | | % | Iraq | | % | Iraq NOC | % |
|------------------|------------------|------------------|------------------|--------------------|------------------|----------------|-----|---------------|---|
| | | 80% of Iraq | million bbl /yr | | gross gas prod'n | net gas prod'n | | | |
| thousand bbl / d | million bbl / yr | million bbl / yr | million bbl / yr | | Bcf/yr | Bcf/yr | | (est. Bcf/yr) | |
| 970 | 354 | 35 | 10% | na | 23 | 2 | 10% | | |
| 1,010 | 369 | 37 | 10% | na | 24 | 2 | 10% | | |
| 1,010 | 369 | 37 | 10% | interpolated | 20 | 2 | 10% | | |
| 1,160 | 423 | 42 | 10% | interpolated | 17 | 2 | 10% | | |
| 1,260 | 460 | 46 | 10% | na | 14 | 1 | 10% | | |
| 1,320 | 482 | 48 | 10% | na | 13 | 1 | 10% | | |
| 1,390 | 507 | 406 | 80% | na | 21 | 17 | 80% | | |
| 1,230 | 449 | 359 | 80% | na | 18 | 15 | 80% | | |
| 1,500 | 548 | 438 | 80% | 194 | 27 | 22 | 80% | | |
| 1,520 | 555 | 444 | 80% | 196 | 32 | 25 | 80% | | |
| 1,550 | 566 | 453 | 80% | 200 | 28 | 22 | 80% | | |
| 1,690 | 617 | 493 | 80% | 220 | 31 | 25 | 80% | | |
| 1,470 | 537 | 429 | 80% | 185 | 30 | 24 | 80% | | |
| 2,020 | 737 | 590 | 80% | 250 | 35 | 28 | 80% | | |
| 1,970 | 719 | 575 | 80% | 230 | 40 | 32 | 80% | | |
| 2,260 | 825 | 660 | 80% | 369 | 58 | 47 | 80% | | |
| 2,420 | 883 | 707 | 80% | 369 | 58 | 47 | 80% | | |
| 2,350 | 858 | 686 | 80% | interpolated | 59 | 47 | 80% | | |
| 2,560 | 934 | 748 | 80% | interpolated | 60 | 48 | 80% | | |
| 3,480 | 1,270 | 1,016 | 80% | interpolated | 61 | 49 | 80% | | |
| 2,522 | 921 | 736 | 80% | | 62 | 50 | 80% | | |
| 1,005 | 367 | 293 | 80% | | 23 | 18 | 80% | | |
| 1,017 | 371 | 297 | 80% | | 24 | 19 | 80% | | |
| 1,010 | 369 | 295 | 80% | | 18 | 14 | 80% | | |
| 1,214 | 443 | 354 | 80% | | 20 | 16 | 80% | | |
| 1,443 | 527 | 421 | 80% | | 23 | 18 | 80% | | |
| 1,700 | 621 | 496 | 80% | | 45 | 36 | 80% | | |
| 2,089 | 762 | 610 | 80% | | 132 | 106 | 80% | | |
| 2,705 | 987 | 790 | 80% | | 202 | 162 | 80% | | |
| 2,951 | 1,077 | 862 | 80% | dry natural gas | 215 | 172 | 80% | | |
| 2,070 | 756 | 604 | 80% | prod. marketed gas | 148 | 118 | 80% | | |
| 305 | 111 | 89 | 80% | | 41 | 33 | 80% | | |
| 425 | 155 | 124 | 80% | | 106 | 85 | 80% | | |
| 527 | 192 | 154 | 80% | | 95 | 76 | 80% | | |
| 573 | 209 | 167 | 80% | | 119 | 95 | 80% | | |
| 585 | 214 | 171 | 80% | | 119 | 95 | 80% | | |
| 599 | 218 | 175 | 80% | | 121 | 97 | 80% | | |
| 1,175 | 429 | 343 | 80% | | 117 | 93 | 80% | | |
| 2,165 | 790 | 632 | 80% | | 148 | 119 | 80% | | |
| 2,523 | 921 | 737 | 80% | | 121 | 97 | 80% | | |
| 2,586 | 944 | 755 | 80% | | 120 | 96 | 80% | | |
| 2,410 | 880 | 704 | 80% | | 106 | 85 | 80% | | |
| 2,043 | 746 | 597 | 80% | | 92 | 73 | 80% | | |
| 1,321 | 482 | 386 | 80% | | 46 | 37 | 80% | | |
| 2,026 | 740 | 592 | 80% | | 69 | 55 | 80% | | |
| 1,893 | 691 | 553 | 80% | | 94 | 75 | 80% | | |
| 2,014 | 735 | 588 | 80% | | 106 | 85 | 80% | | |
| 2,100 | 766 | 613 | 80% | | 219 | 176 | 80% | | |
| 2,389 | 872 | 697 | 80% | | 278 | 223 | 80% | | |
| 2,403 | 877 | 702 | 80% | | 305 | 244 | 80% | | |
| 2,412 | 880 | 704 | 80% | | 300 | 240 | 80% | | |
| 2,638 | 963 | 770 | 80% | | 254 | 203 | 80% | | |
| 2,995 | 1,093 | 875 | 80% | | 316 | 253 | 80% | | |
| 3,066 | 1,119 | 895 | 80% | | 336 | 269 | 80% | | |
| 3,380 | 1,234 | 987 | 80% | OGJ Sep15 | 465 | 372 | 80% | | |
| 4,055 | 1,480 | 1,184 | 80% | OGJ Sep17 | 354 | 283 | 80% | | |
| 4,459 | 1,627 | 1,302 | 80% | OGJ Sep18 | 368 | 294 | 80% | | |
| 4,471 | 1,632 | 1,305 | 80% | OGJ Sep18 | 376 | 301 | 80% | | |
| 4,631 | 1,690 | 1,352 | 80% | | 459 | 367 | 80% | | |



Iraq Petroleum 1912-1972

BP Stat Rev 2018

| OGJ100 | OGJ100 | Bcf/yr |
|--------|--------|--------|
| 792 | | |
| 984 | | |
| 1,051 | 202 | |
| 744 | 141 | |
| 103 | 22 | |
| 155 | 58 | |
| 164 | 68 | |
| 201 | 88 | |
| 219 | 121 | |
| 210 | 123 | |
| 419 | 152 | |
| 770 | 231 | |
| 922 | 269 | |
| 940 | 243 | |
| 860 | 243 | |
| 741 | 70 | |
| 465 | 50 | |
| 731 | 67 | |
| 691 | 66 | |
| 669 | 62 | |
| 759 | 59 | |
| 885 | 241 | |
| 876 | 248 | |
| 861 | 280 | |
| 903 | 254 | |
| 1,051 | 316 | |
| 1,177 | 336 | |
| 1,135 | 465 | |
| 1,279 | 354 | |
| 1,696 | 368 | |
| 1,631 | 376 | |

| Energy Intel | Bcf/yr |
|--------------|--------|
| 130 | |
| 117 | |

| OGJ Sep15 | OGJ Sep17 | OGJ Sep18 | OGJ Sep18 |
|-----------|-----------|-----------|-----------|
| 266 | | | |
| 258 | | | |
| 349 | | | |
| 357 | | | |
| 459 | | | |

| | | | | |
|-------|----|--------|----|-------|
| Total | na | 32,162 | na | 5,707 |
|-------|----|--------|----|-------|

| | US Energy Information Administration, International Energy Statistics | | | vented & flared of | | | | | BP Stat Rev 2018 | | |
|------|---|---|-------------------------------------|-----------------------------------|---------------------------------|--|------------|----------------------------|------------------------------|----------------------|-----|
| | Crude oil, condensate, & NGPL k bbl per day | Crude oil, condensate, & NGPL million bbl per yr | Crude oil, condensate, & NGPL Mb | Prod Marketed Gas Bcf per year | Dry Natural gas Bcf per year | Vented & Flared Bcf per year | gross % | Reinjected Bcf per year | Gross Prod'n Bcf per year | Natural gas Bcf/d | Bcf |
| 1980 | 2,522.0 | 921 | 970 | NA | 62.0 | 339 | | NA | NA | 0.12 | 43 |
| 1981 | 1,005.0 | 367 | 331 | NA | 23.0 | 117 | | NA | NA | 0.06 | 21 |
| 1982 | 1,017.0 | 371 | 361 | NA | 24.0 | 124 | | NA | NA | 0.06 | 23 |
| 1983 | 1,010.0 | 369 | 404 | NA | 18.0 | 119 | | NA | NA | 0.04 | 16 |
| 1984 | 1,214.0 | 443 | 448 | NA | 20.0 | 144 | | NA | NA | 0.05 | 20 |
| 1985 | 1,443.0 | 527 | 520 | NA | 23.0 | 191 | | NA | NA | 0.08 | 29 |
| 1986 | 1,700.0 | 621 | 693 | NA | 45.0 | 246 | | NA | NA | 0.14 | 52 |
| 1987 | 2,089.0 | 762 | 873 | NA | 132.0 | 196 | | NA | NA | 0.34 | 126 |
| 1988 | 2,705.0 | 987 | 1,015 | NA | 202.0 | 179 | | NA | NA | 0.51 | 187 |
| 1989 | 2,951.0 | 1,077 | 1,036 | NA | 215.0 | 190 | | NA | NA | 0.59 | 216 |
| 1990 | 2,070.0 | 756 | 784 | 148 | 148.0 | 160 | 50% | - | 321.0 | 0.37 | 134 |
| 1991 | 305.0 | 111 | 104 | 41 | 39.0 | 25 | 37% | - | 67.0 | 0.16 | 58 |
| 1992 | 425.0 | 155 | 194 | 106 | 101.0 | 4 | 3% | - | 109.8 | 0.21 | 76 |
| 1993 | 527.0 | 192 | 166 | 95 | 90.1 | 2 | 2% | - | 97.1 | 0.23 | 86 |
| 1994 | 572.5 | 209 | 184 | 119 | 111.9 | 2 | 1% | - | 120.4 | 0.29 | 106 |
| 1995 | 585.0 | 214 | 194 | 119 | 112.0 | 2 | 1% | - | 120.4 | 0.29 | 106 |
| 1996 | 598.5 | 218 | 212 | 121 | 114.4 | 2 | 1% | - | 122.9 | 0.30 | 108 |
| 1997 | 1,175.1 | 429 | 426 | 117 | 107.7 | 18 | 13% | - | 134.2 | 0.28 | 102 |
| 1998 | 2,165.0 | 790 | 774 | 148 | 104.2 | 28 | 20% | - | 141.3 | 0.27 | 99 |
| 1999 | 2,522.9 | 921 | 953 | 121 | 112.3 | 34 | 22% | - | 154.7 | 0.29 | 107 |
| 2000 | 2,585.7 | 944 | 954 | 120 | 111.2 | 34 | 22% | - | 153.6 | 0.29 | 105 |
| 2001 | 2,410.0 | 880 | 921 | 106 | 97.5 | 34 | 24% | - | 139.5 | 0.25 | 93 |
| 2002 | 2,043.0 | 746 | 772 | 92 | 83.3 | 34 | 27% | - | 125.4 | 0.22 | 79 |
| 2003 | 1,320.8 | 482 | 491 | 46 | 38.8 | 35 | 43% | - | 81.2 | 0.14 | 52 |
| 2004 | 2,026.5 | 740 | 741 | 69 | 61.8 | 30 | 30% | - | 98.9 | 0.09 | 33 |
| 2005 | 1,892.7 | 691 | 669 | 94 | 51.2 | 279 | 70% | 28 | 400.8 | 0.13 | 49 |
| 2006 | 2,013.6 | 735 | 730 | 106 | 63.6 | 272 | 65% | 42 | 420.2 | 0.13 | 49 |
| 2007 | 2,099.7 | 766 | 782 | 219 | 51.6 | 254 | 60% | 49 | 425.5 | 0.44 | 160 |
| 2008 | 2,388.7 | 872 | 886 | 278 | 66.4 | 212 | 41% | 32 | 522.0 | 0.62 | 227 |
| 2009 | 2,403.4 | 877 | 893 | 305 | 40.5 | 247 | 42% | 34 | 585.4 | 0.66 | 242 |
| 2010 | 2,411.6 | 880 | 901 | 300 | 46.0 | 267 | 45% | 29 | 596.3 | 0.69 | 252 |
| 2011 | 2,637.7 | 963 | 1,012 | 286 | 30.9 | 339 | 51% | 34 | 660.1 | 0.61 | 223 |
| 2012 | 2,995.3 | 1,093 | 1,124 | 270 | 22.8 | na | na | na | 723.8 | 0.61 | 223 |
| 2013 | 3,066.4 | 1,119 | 1,132 | na | 41.6 | na | na | na | 755.4 | 0.68 | 250 |
| 2014 | 3,380.0 | 1,234 | 1,182 | na | 32.0 | na | na | na | 771.7 | 0.73 | 266 |
| 2015 | 4,055.0 | 1,480 | 1,455 | na | 35.4 | na | na | na | 885.0 | 0.71 | 258 |
| 2016 | 4,458.5 | 1,627 | 1,614 | na | 38.9 | na | na | na | Updated June | 0.95 | 349 |
| 2017 | 4,470.7 | 1,632 | 1,655 | na | 45.0 | Updated June 2019 (dry gas, EIA stats to 2017) | na | na | Updated June | 0.98 | 357 |
| 2018 | 4,630.7 | 1,690 | 1,684 | na | na | na | na | na | Updated June | 1.26 | 459 |

| | | | | | | |
|------------------|-------|-------|-------|-----|-----|-------|
| 1990-2011 totals | 3,156 | 1,783 | 2,312 | 41% | 249 | 5,598 |
|------------------|-------|-------|-------|-----|-----|-------|

Production, export & consumption of crude oil & associated gas September 2008

| | North oil Company | South oil Company | Total Production |
|---------------------------------------|-------------------|-------------------|------------------|
| Oil production 1000 bbl/day | 586 | 1594 | 2180 |
| Export oil 1000 bbl/day | 322 | 1323 | 1645 |
| Supply to refineries 1000 bbl/day | 211 | 240 | 451 |
| Supply to power stations 1000 bbl/day | 11 | 46 | 57 |
| Losses 1000 bbl/day | 4 | — | 4 |
| Associated gas production mmscfd | 285 | 896 | 1181 |
| Flare gas mmscfd | 34 | 479 | 513 |

Production, export & consumption of crude oil & associated gas July 2010

| | North oil Company | South oil Company | Total Production |
|---------------------------------------|-------------------|-------------------|------------------|
| Oil production 1000 bbl/day | 648 | 1653 | 2301 |
| Export oil 1000 bbl/day | 384 | 1433 | 1817 |
| Supply to refineries 1000 bbl/day | 313 | 251 | 564 |
| Supply to power stations 1000 bbl/day | 22 | 55 | 77 |
| Losses 1000 bbl/day | 0.59 | — | 0.59 |
| Associated gas production mmscfd | 422 | 997 | 1419 |
| Flare gas mmscfd | 134 | 531 | 665 |

Republic of Iraq Ministry of Oil production, consumption, exports, and flaring data; www.oil.gov.iq/

Crude Oil Exports

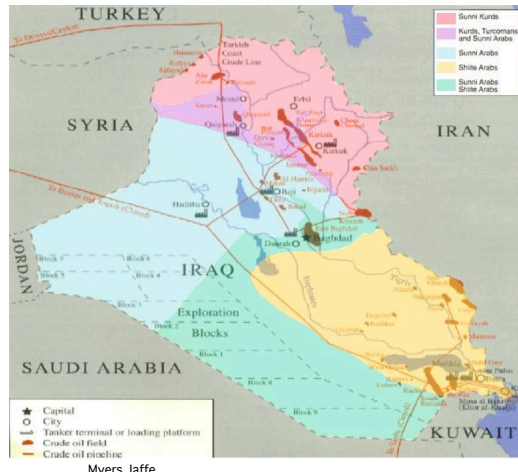
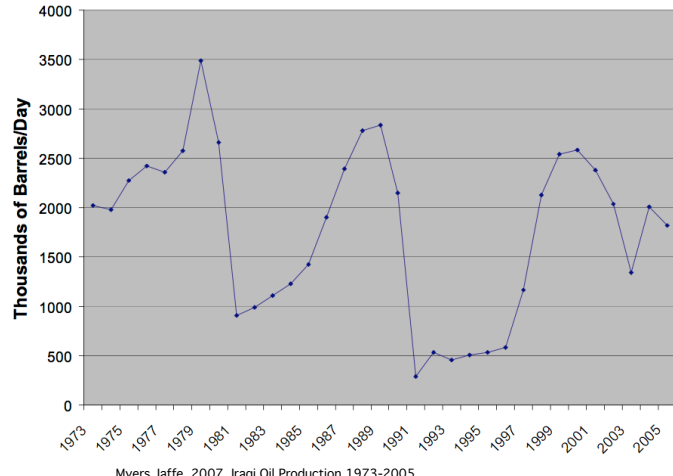
IRAQ CRUDE OIL EXPORTS – OCTOBER 2011

Released on : 25/11/2011
Next release on : 25/12/2011

| YEAR | MONTH | BASRAH CRUDE | | KIRKUK CRUDE | | TOTAL | | AVERAGE PRICE (US\$/BBL) |
|------|---------|-------------------------|-----------------------|-------------------------|-----------------------|-------------------------|-----------------------|--------------------------|
| | | QUANTITY MILLION BARREL | AMOUNT MILLION DOLLAR | QUANTITY MILLION BARREL | AMOUNT MILLION DOLLAR | QUANTITY MILLION BARREL | AMOUNT MILLION DOLLAR | |
| 2011 | October | 50.6 | 5,229 | 14.2 | 1,513 | 64.8 | 6742 | 104.043 |

THE ABOVE MENTIONED QUANTITIES EXPORTED THROUGH BASRAH OIL TERMINAL AND KHOR ALAMYA OIL TERMINAL FROM ARABIAN GULF AND CEYLAN TERMINAL IN TURKEY FROM THE MEDETRANIAN SEA AND BY TRUCKS TO JORDAN IN THE FOLLOWING BUYERS:

| | | | | | | | |
|-------------|--------------|---------------|--------------|-----------------|----------------|----------|----------------|
| API OIL | BP OIL | CEPSA | CHEVRON | CHINA OFFSHORE | CONOCOPhillips | ENI | ERG |
| ITALIAN | BRITISH | SPANISH | AMERICAN | CHINESE | AMERICAN | ITALIAN | ITALIAN |
| EXXON MOBIL | GS CALTEX | HINDUSTAN | INDIAN OIL | JORDAN PET. CO. | JX NIPPON OIL | KOCH | KOREA NATIONAL |
| AMERICAN | KOREAN | INDIAN | INDIAN | JORDANNAN | JAPANESE | AMERICAN | SOUTH KOREAN |
| LIKOL | MOTOR OIL | PETRO DIAMOND | PETROVIETNAM | REFSOL | SABER | SARAS | SHELL |
| RUSSIA | GREECE | JAPANESE | VIETNAMESE | SPANISH | MOROCCAN | ITALIAN | BRITISH |
| SINOCEM | SK ENERGY | TOTAL | TOYOTA | TURPAC | UNIPAC | VALERO | AMERICAN |
| CHINESE | SOUTH KOREAN | FRENCH | JAPANESE | TURKISH | CHINESE | AMERICAN | CHINESE |



Cell: I9**Comment:** Rick Heede:

The Iraq National Oil Company (INOC) was founded in 1966 by the Iraqi government. It was empowered to operate all aspects of the oil industry in Iraq except for refining which was already being run by the Oil Refineries Administration (1952) and local distribution which was also already under government control. In 1961 Iraq passed Public Law 80 whereby Iraq expropriated 95% of the Iraq Petroleum Company's concessions, and went on to announce the intent to form the INOC in 1964. In 1967 Iraq and the Soviet Union signed the Iraq-Soviet Protocol which committed the Soviet Union to give technical and financial aid to the company. In 1967 and 1968 the company's purview was expanded to include areas expropriated from the Iraq Petroleum Company. Unlike the National Iranian Oil Company, the INOC was forbidden from entering into partnerships or granting concessions to foreign oil companies. Though there was discussion of allowing the French Compagnie Française de Pétroles, partners in IPC from whom the North Rumaila Field had been appropriated, to enter into a contract to develop the field, ultimately, with the help of the Soviet Union, the INOC opened the field on 7 April 1972. In 1972 nationalization was complete. In its first years of sole control INOC managers succeeded in raising production in Iraq from 1.4 million barrels per day (220,000 m³/d) to over 3 million barrels per day (480,000 m³/d) in 1980. But the outbreak of war with Iran that year severely hit capacity. In April 1987, under newly appointed oil minister Issam Chalabi, Decree 267 merged the INOC with the oil ministry, which became the direct operator in the industry as well as its regulator. At an operational level, the single national-level company was broken into a series of regional companies, the largest among them being North Oil Company, based in Kirkuk, and South Oil Company, based in Basra. wikipedia.

The following dateline is from: Thompson, Eric V. (undated) A Brief History Of Major Oil Companies In The Gulf Region, Petroleum Archives Project, Arabian Peninsula & Gulf Studies Program, University of Virginia, www.virginia.edu/igpr/APAG/apagoihistory.html Iraq Petroleum Company:

1912: Turkish Petroleum Company founded with 50% ownership by Turkish National Bank, 25% Deutsche Bank, 25% Royal Dutch/Shell

1914: Turkish Petroleum Company reorganized, with Anglo-Persian holding 50%, Deutsche Bank and Shell each holding 25%

1914: Ottoman Grand Vizier promises Mesopotamian concession to Turkish Petroleum Company, but final concession agreement is not signed

1922: CFP joins Turkish Petroleum Company

1925: Turkish Petroleum Company gains oil concession in Iraq

1928: Gulf joins Turkish Petroleum Company

1928: Royal Dutch/Shell, Anglo-Persian, CFP, Exxon, Mobil, Atlantic Richfield, Gulf Oil Corporation, Standard Oil of Indiana [Amoco], and Participations and Explorations Corp., establish a joint venture called the Near East Development Company; The Near East Development Company signs "Red Lines Agreement" binding participating companies to cooperate with Turkish Petroleum Company in any ventures in Turkey, the Levant, Iraq and Arabian Peninsula (Atlantic, Gulf, and Standard eventually sell their shares to other participants)

1929: Turkish Petroleum changes name to Iraq Petroleum Company

1932: Mosul Petroleum Company formed to hold northern portion of IPC's Iraq concession

1938: Basrah Petroleum Company formed to hold southern portion of IPC's Iraq concession

1939: IPC establishes Abu Dhabi Petroleum Company Ltd. (ADPC) to hold Abu Dhabi concession

1939: British government seizes IPC shares held by CFP

1966: Iraq revokes portions of IPC concession and nationalizes these concessions

1972: Iraq nationalizes remaining IPC concessions

1973: Iraq nationalizes assets of foreign assets in Basrah Petroleum Company

Cell: M9**Comment:** Rick Heede:

World Bank, 2008b, has no data on Iraq NOC. Presumably 100 percent state-owned through the Iraq Ministry of Petroleum.

Cell: D11**Comment:** Rick Heede:

On this worksheet we report extractive data for each company or state-owned enterprise. Three columns under crude oil and natural gas allow for data reported in one of three formats (e.g., thousand barrels per day, or million barrels per year, or million tonnes per year). Coal is normally reported in U.S. or metric tonnes per year.

Note: the carbon content of the extracted resources is adjusted by a number of factors before emissions estimates are made in the worksheet 1 to the left. Most important is the subtraction of the fraction typically sequestered in petrochemicals and other non-combusted uses such as road oils, waxes, lubricants, greases, etc. See the comment for each extracted resource for detailed discussions of the combusted vs sequestered fractions.

Cell: D12**Comment:** Rick Heede:

Total net worldwide crude oil plus natural gas liquids produced by each company or state-owned enterprise. Where data is available, we list net production. Crude production includes natural gas liquids (NGL) unless noted.

Cell: H12**Comment:** Rick Heede:

Natural gas is typically reported as dry gas; natural gas liquids are reported under crude oil.

Carbon dioxide is normally removed from the gas flow at the production site (see "Vented Carbon Dioxide").

"SCM/d" = standard cubic meters per day. "cf/d" = cubic feet per day.

Cell: F24**Comment:** Rick Heede:

We have no reliable information on INOC's equity production or details of production sharing agreements with international operators. Until detailed information becomes available we assume that INOC's equity share of Iraqi production is 80% per year for 1966-2018. This may under-estimate INOC's share in some years and over-estimate INOC's share in other years, and is subject to revision.

The Oil & Gas Journal estimates for 1987-2001 appear to reflect total Iraqi production, not INOC's, and we do not use the O&GJ data (reproduced in column L). We attribute 10 percent of Iraq oil production prior to INOC's formation in 1966.

Cell: J24**Comment:** Rick Heede:

We have no reliable information on INOC's equity production or details of production sharing agreements with international operators. Until detailed information becomes available we assume that INOC's equity share of Iraqi production is 80% per year for 1966-2018. This may under-estimate INOC's share in some years and over-estimate INOC's share in other years, and is subject to revision.

The Oil & Gas Journal estimates for 1987-2001 appear to reflect total Iraqi production, not INOC's, and we do not use the O&GJ data (reproduced in column L). We attribute 10 percent of Iraq oil production prior to INOC's formation in 1966.

Cell: D26**Comment:** Rick Heede:

Data for 1960 through 1999 and 2002-2003 from EIA (2004) Annual Energy Review 2003, Table 11.5: World Crude Oil Production 1960-2003. INOC production is assumed to account for 100 percent of Iraq's production.

Cell: I26**Comment:** Rick Heede:

U.S. Bureau of Mines, Minerals Yearbook 1964, page 348, marketed production 1960-1964.

Cell: I30**Comment:** Rick Heede:

U.S. Bureau of Mines, Minerals Yearbook 1968, page 750, marketed production 1964-1967. Gross production not shown.

Cell: I34**Comment:** Rick Heede:

U.S. Bureau of Mines, Minerals Yearbook 1970, page 764, gross and marketed production 1968-1970.

Cell: I37**Comment:** Rick Heede:

U.S. Bureau of Mines, Minerals Yearbook 1972, page 846, gross and marketed production 1970.

Cell: I38**Comment:** Rick Heede:

U.S. Bureau of Mines Minerals Yearbook 1974, page 887, reports both gross and marketed production for 1972-1973.

Cell: I40**Comment:** Rick Heede:

U.S. Bureau of Mines Minerals Yearbook 1976, page 887, reports both gross and marketed production for 1974-1976.

Cell: L51**Comment:** Rick Heede:

Oil & Gas Journal OJG100 production data for Iraq NOC, 1987-2010. Unless 100 percent of Iraq's oil production is owned by INOC -- which we do not have information to confirm -- we do not use the OJG100 data in the

INOC attribution (see column F).

Cell: B53

Comment: Rick Heede:

Myers Jaffe, Amy (2007) Case Study on Iraq's Oil Industry, Wallace S. Wilson Fellow for Energy Studies, Rice University, in The Changing Role of National Oil Companies in International Energy Markets, James Baker III Institute for Public Policy, Rice University, 1-2 March 2007. To quote:

Restructuring Iraq's Oil Sector

- The dissolution of the Iraq National Oil Company in 1987 led to 15 state-owned oil companies directly under the Ministry of Oil.
- New Iraqi Oil Law
 - INOC revived as an independent holding company but new Iraqi oil companies can be created
 - Creation of High Federal Oil and Gas Council
 - Provincial Authorities will have own committees, oil minister
 - Current and future oil revenues to be collected by Federal government and redistributed back to regions based on population.

Cell: M53

Comment: Rick Heede:

Oil & Gas Journal OGJ100 natural gas production data for Iraq NOC, 1987-2010. The OGJ100 data exceeds EIA estimates for total natural gas production for several years and appears unreliable. We instead estimate INOC's gas production in column F.

Cell: D66

Comment: Rick Heede:

INOC production for 2000 and 2001 from EI (2002) Top 100, p. 160. Estimates only. EI's estimates only differ slightly from EIA's estimates.

Cell: N66

Comment: Rick Heede:

Gas production data 2000 & 2001 also from EI Top 100.

Cell: B69

Comment: Rick Heede:

Iraq was invaded and subsequently occupied by the U.S. military in March, 2003.

Cell: L74

Comment: Rick Heede:

OGJ100 2010 pg 69; updated 2008 value

Cell: J75

Comment: Rick Heede:

OGJ100 2010 pg 69

Cell: L75

Comment: Rick Heede:

OGJ 3 Oct 2011 pg 49

Cell: M75

Comment: Rick Heede:

OGJ100 2010 pg 69

Cell: I80

Comment: Rick Heede:

O&GJ OGJ100 September 2015, p. 53. Shows gas production as 465 Bcf, not 31.9 Bcf as reported in 2016. Corrected earlier estimate: Oil & Gas Journal OGJ100, Sept 2016, page 44. Gas production: 31.9 Bcf (estimate). Probably erroneous, considering pre- and post-2014 gas production (also OGJ).

Cell: L82

Comment: Rick Heede:

Oil & Gas Journal, OGJ100, 3 September 2018, page 45. Oil and gas production for 2016 and 2017.

Cell: F93

Comment: Rick Heede:

BP footnote: * Includes crude oil, shale oil, oil sands, condensates (both lease condensate and gas plant condensate) and NGLs (natural gas liquids - ethane, LPG and naphtha separated from the production of natural gas).

Cell: D193

Comment: Rick Heede:

Myers Jaffe, Amy (2007) Case Study on Iraq's Oil Industry, Wallace S. Wilson Fellow for Energy Studies, Rice University, in The Changing Role of National Oil Companies in International Energy Markets, James Baker III Institute for Public Policy, Rice University, 1-2 March 2007.